Installation Guide

DTC 2278VL
Local-Bus to IDE and Super I/O Controller

Part Number 900085-89B

DATA TECHNOLOGY
CORPORATION

Features

- VESA Local Bus (VL-Bus) operation to 50MHz
- 32-bit host interface
- Support for up to two IDE/ATA devices including:
    - Hard disk drives
    - Tape drives
- Operation of IDE/ATA drives at up to 8.3 MByte/sec
- Enhanced IDE/ATA device driver for the following O/Ss.
    - DOS
    - Novell NetWare 386 v3.1, v3.11, v3.12 & v4.0
- Support for two 3½" 720K/1.44M or 5¼" 360K/1.2M floppy disk drives
- Two serial ports (NS16450 compatible)
- One parallel printer port (Bi-Directional)
- One game port

Configuration & Hardware Jumpers

The factory default settings are suitable for most computer applications and typically do not need to be changed.

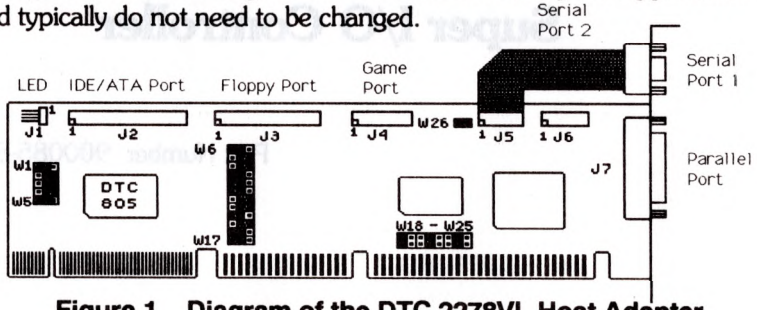


Figure 1 Diagram of the DTC 2278VL Host Adapter

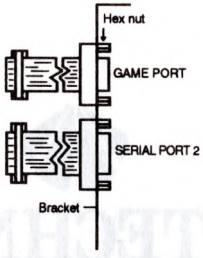


Figure 2 Diagram of Serial Port 2 and Game Port Bracket

Data Transfer Rate (W1 - W5)

These jumpers control the data transfer rate between the IDE/ATA drive and the DTC 2278VL.

NOTES:

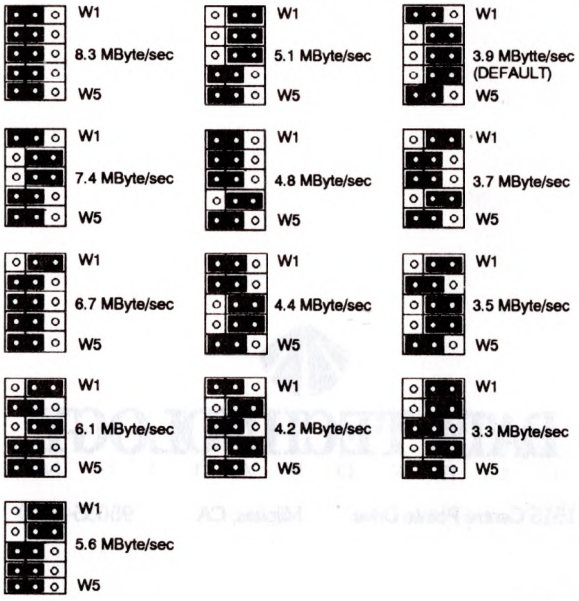
It is advisable to leave these jumpers in their factory default settings until basic operation is achieved. The factory default settings will work with all IDE drives and can be adjusted later to maximize performance.

If the data transfer rate of the IDE drive you are using does not match a setting on this chart, choose the nearest transfer rate BELOW your drive's data transfer rate.

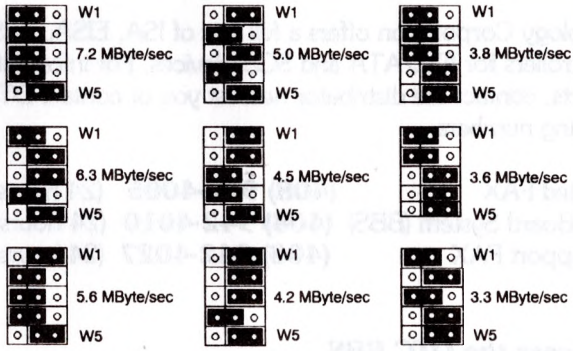
To determine the data transfer rate supported by your IDE/ATA drive, refer to the drive manufacturer's data sheet. Look for the "Host Data Transfer Rate" spec entry. If this information is not available, CONTACT THE DRIVE MANUFACTURER'S TECHNICAL SUPPORT GROUP.

A list of popular drives and their transfer rates is available on the Data Technology Corporation Automated FAX. Refer to the Sales & Technical Support section at the end of this manual.

For 33 MHz VL-BUS Computers (also DX/2 66)



For NON 33 MHz VL-BUS Computers



IDE Controller Interrupt (W6)

IRQ 14
(Default)

IRQ 15
(Secondary)

Floppy Controller Address (W7)

Primary (3F0-3F7) address and Secondary (370-377)

Primary

Secondary

IDE Controller Address (W8)

Primary (1F0-1F7, 3F6-3F7) address and Secondary (170-177, 376-377)

Primary

Secondary

IDE Controller Enable (W9)

Enable

Disable

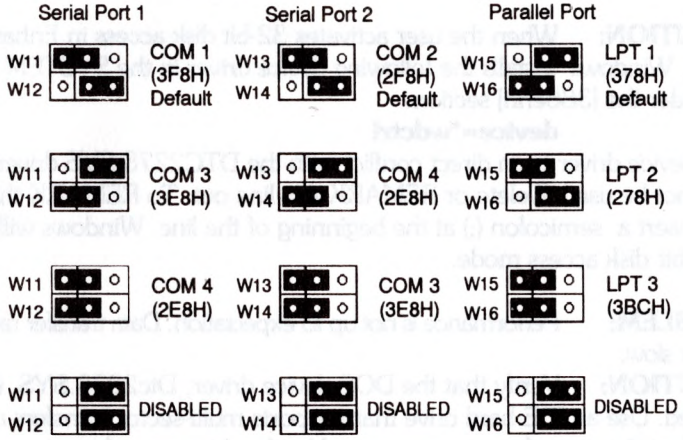
Floppy Controller Enable (W10)

Enable

Disable

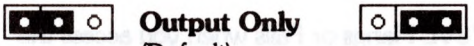
IO Port Address (W11 - W16)

These jumpers select the address of the IO ports as follows:

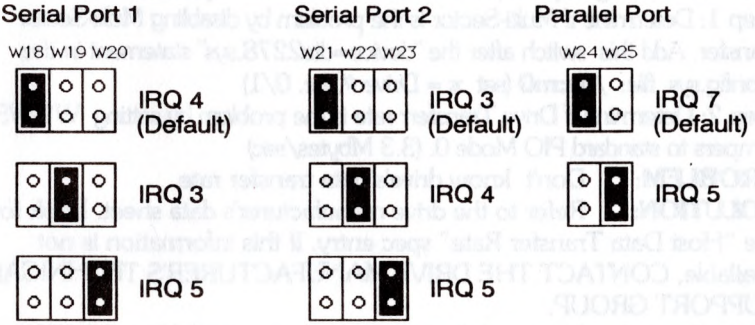


Parallel Port I/O Select (W17)

This jumper selects an output only function (for printer use), or an I/O function which is controlled by the printer control register.



I/O Port Interrupt Select (W18-W25)



Game Port Enable (W26)

Installation

NOTES:

When connecting a ribbon cable connector, always align the colored (blue or red) side of the cable to Pin 1.

The DTC 2278VL must be jumpered properly to work with the speed of the microprocessor and the speed of the IDE drive being used. Refer to the jumper settings tables on Page 2 and 3 of this manual to set W1-W5.

1. Power down the computer, all devices connected to it, and disconnect the power cord..
2. Set the jumpers on the DTC 2278VL.
3. Install the DTC 2278VL in an available 32-bit VL-BUS slot.
4. Install the Serial Port 2 and Game Port bracket in an available blank bracket location.
5. Connect the header connector from the Serial Port 2 connector ribbon cable to J3.
6. Connect the header connector from the Game Port connector ribbon cable to J4.
7. Connect the 34-pin floppy drive cable to J5. Connect the other end of the cable to the floppy drive(s). The twisted end of the cable is for drive A: and the middle connector is for drive B:. If drive B: is installed, remove the terminating resistors from it.
8. Connect the 40-pin IDE/ATA ribbon cable connector to J6. Connect the other end of the cable to the IDE/ATA drive(s).
9. Attach the hard drive activity LED connector to J7.
10. Close the computer cover and power it on.
11. Turn system on and enter the CMOS Setup program. Select the appropriate drives type for the hard drive attached . Save CMOS settings.

Installing Software Drivers

DOS

The DOS driver, DTC2278.SYS, needs to be loaded to turn on 32-bit mode and enable multi-sector transfers for optimal performance. This drvier may be loaded into high memory.

- Insert MS-DOS boot disk in drive A: and reboot system.
- Partition the IDE drive with DOS FDISK and then perform DOS FORMAT. Install DOS on hard drive.
- Copy the file "**dtc2278.sys**" to the root directory of the primary hard disk drive.
- Add the statement "**device=dtc2278.sys**" to the CONFIG.SYS file on the hard drive. For best results, it should be the first statement in the CONFIG.SYS file.
- Re-boot the system.

Novell NetWare 386 v3.1, 3.11 & v3.12

- Copy the file "**dtcide3.dsk**" to the directory where the Novell "server" is installed.
- At the NetWare console prompt (:) type:

  "**LOAD DTCIDE3**"

Novell NetWare 386 v4.0

- Copy the files "**dtcide4.dsk**" and "**dtcide4.ddi**" to the directory where the Novell "server" is installed.
- At the NetWare console prompt (:) type:

  "**LOAD DTCIDE4**"

Troubleshooting

PROBLEM: DTC 2278VL will not run Windows 3.1 in Enhanced Mode.
SOLUTION: When the user activates 32-bit disk access in Enhanced Mode, Windows installs the following device driver in the SYSTEM.INI file under the [386enh] section:

device=*wdctrl

This device driver is in direct conflict with the DTC2278.SYS driver and must not be used. Delete or REMARK this line out. To REMARK this line, insert a semicolon (;) at the beginning of the line. Windows will run in 32-bit disk access mode.

PROBLEM: Performance is not up to expectation. Data transfer rates appear slow.
SOLUTION: Verify that the DOS device driver, Dtc2278.SYS, is installed. Use an IDE hard drive that supports multi-sector transfers and has a fast data transfer rate as reported by the drive manufacturer.

The benchmark utility program you are using may not be accurately measuring the data transfer rate from the IDE drive to the host. Try using another utility like Coretest or PC Magazine's Benchmark.

PROBLEM: DTC 2278VL Hangs or Fails when you access the Hard Disk.
SOLUTION: The drive may have limitations in its operational capability. Use the following steps to put the drive in a standard operation mode.
Step 1: Determine if Multi-Sector is the problem by disabling Multi-Sector transfer. Add this switch after the "device=dtc2278.sys" statement in the Config.sys file: **/dx:m0** (set **x** = Drive #, i.e. 0/1)
Step 2: Determine if Drive Transferr rate is the problem by setting W1-W5 jumpers to standard PIO Mode 0. (3.3 Mbytes/sec)
PROBLEM: Don't know drive's data transfer rate.
SOLUTION: Refer to the drive manufacturer's data sheet. Look for the "Host Data Transfer Rate" spec entry. If this information is not available, CONTACT THE DRIVE MANUFACTURER'S TECHNICAL SUPPORT GROUP.
A list of popular drives and their transfer rates is available on the Data Technology Corporation Automated FAX. Refer to the Sales & Technical Support section at the end of this manual.

Sales & Technical Support

Data Technology Corporation offers a full line of ISA, EISA, VESA, and PCI bus controllers for IDE/ATA and SCSI devices. For information on other products, contact the distributor nearest you or contact DTC at one of the following numbers:

Automated FAX	**(408) 942-4005**	(24 hours)
Bulletin Board System (BBS)	**(408) 942-4010**	(24 hours)
Sales Support FAX	**(408) 942-4027**	(24 hours)

How to Access the DTC BBS

When you log on to the DTC BBS, you are brought in to the **MAIN** Conference. The first thing you will need to do is type in **J** to join the appropriate conference for the DTC 2278VL. After the conference menu is displayed, select the correct conference number. Once in the conference, type **F** to view the files directories. Select the **DRIVERS** directory to view a list of all drivers that can be downloaded. The **Install Guides & Specs** directory contains Install Guides and Technical notes that may be downloaded.

The BBS setup requires the following modem settings:

Baud Rate: 1200 - 14400 bps **Data Bits:** 8 **Stop Bit:** 1 **Parity:** None

DTC Automated Fax System

The 24 hour Automated Fax system can be used to access a wide range of information: Product Data Sheets, Authorized Distributor list, Jumper Settings, and Technical Notes.. All that is required is a touch-tone phone and a Fax machine to have the information faxed directly to you. Simply call the Automated Fax phone number and follow the verbal instructions.

FCC Compliance

This device complies with the Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. However, there is no guarantee that interference will not occur in a particular installation. Data Technology is not responsible for any television, radio, or other interference caused by unauthorized modification of this product.

Modifications to this equipment that are unauthorized by the manufacturer may void the user's right to operate this device according to FCC rules.

FCC ID # J8Y2278VL

Limited Hardware Warranty

Data Technology Corporation warrants the DTC 2278VL against defects in materials and workmanship for a period of one (1) year from the date of original retail purchase. Data Technology Corporation will, at its option, repair, replace, or refund the purchase price of the defective product if returned, with a copy of the bill of sale, shipping prepaid, during the warranty period. Data Technology Corporation will not be liable for special, incidental, or consequential damages arising out of the use of this product and in no event shall the liability of Data Technology exceed the actual amount paid by purchaser for this product.

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